

## Duren, Sabre

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**From:** Connie Woodhouse [Connie.Woodhouse@noaa.gov]  
**Sent:** Tuesday, August 23, 2005 10:12 AM  
**To:** strategies@lc.usbr.gov  
**Subject:** response to call for comments

**Attachments:** USBRpaleocomments.doc



USBRpaleocomment  
s.doc

Hi Terry,

A number of the paleoscientists and climate scientists who attended the Colorado River/Paleo workshop in Tucson in May would like to voice support for the consideration of paleodata in the management of the Colorado River system. Attached is a letter that was generated and signed by 17 of us that we hope the USBR will read and consider in the development of management strategies. And of course, all of use are more than willing to assist in this however possible.

best regards,

Connie

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Connie Woodhouse  
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USA

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G.008

August 23, 2005

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attn: BCOO-1000  
P.O. Box 61470  
Boulder City, NV 89006-1470

Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attn: UC-402  
125 South State St.  
Salt Lake City, UT 84318-1147

Re: Comments on content, format, mechanisms, and analysis to be considered during the development of management strategies for Lake Powell and Lake Mead under low reservoir conditions

The recent (1999-2004) drought in the western U.S. is a reminder that droughts are a prominent feature of the Colorado River basin. Major droughts, such as this recent event and the 1930s and 1950s droughts, have been experienced several times over the period of modern climate records. Because they have occurred in the historical past, it is reasonable and widely accepted that we should expect droughts of similar magnitude to occur in the future. However, the instrumental record of droughts extends back just 100 years and provides only a subset of the droughts that have occurred over a longer time frame, as documented by numerous reconstructions of past climate over the past 300 to 1000 years from tree-ring data. Tree-ring reconstructions suggest that droughts more persistent and more severe than any in the instrumental have occurred over the past centuries. These records indicate that the frequency of extreme drought events has also varied, and that the recent centuries have included periods of time with a higher frequency of extreme events than what we have seen in the past 100 years.

Reconstructions of streamflow from tree rings are possible because annual tree growth in many parts of the western U.S. is controlled by the same set of climatic conditions that contribute to water year flows. The current methodologies employed in tree-ring based reconstructions are the result of over 30 years of work leading to improved statistical techniques for modeling hydroclimatic variability from tree rings and the validation of those modeling results with independent data. Analyses of other types of paleohydrologic data, such as the geochemistry and fossil content of lake sediments, provide additional checks and validations of the tree-ring records. After over three decades of careful research, we as a scientific community, can assert confidence in the use of tree-ring data to extend our annual records of hydrology back beyond the 100 years of instrumental records.

High quality reconstructions of streamflow exist for the Colorado River basin which quantify annual hydrologic conditions for over 400 years. These records highlight the fact

that gauged flow records for the past 100 years do not capture the full range of drought severity and duration that can occur on the Colorado River. Extended records of streamflow allow a broader range of shortage scenarios to be considered to determine the best possible management strategies for coping with drought.

The information from the extended records of past hydroclimatic variability needs to be used in concert with current and projected climate information in the management of the river. Future hydroclimatic conditions will not be entirely analogous to conditions of the past, but by documenting and understanding the record of past variability and extremes, which contain a broader range of conditions as well as information on decadal variability, judicious management strategies can be developed when considering projections of future climate and water availability.

In conclusion, we urge that paleohydrologic data, along with other relevant climate data, be considered in any assessment of possible Colorado River shortages in the future and in the determination of shortage criteria. The scientific community represented in this letter is willing to assist the US Bureau of Reclamation with use and interpretation of these data.

The opinions expressed in this letter are those of the individuals listed below and not those of their affiliated organizations.

Sincerely,

Franco Biondi, University of Nevada, Reno, NV  
Daniel Cayan, Scripps Institute of Oceanography and U.S. Geological Survey, La Jolla, CA  
Julia Cole, University of Arizona, Tucson, AZ  
Henry Diaz, NOAA/OAR Climate Diagnostics Center, Boulder, CO  
David Enfield, NOAA Atlantic Oceanographic and Meteorological Laboratory, Miami FL  
Gregg Garfin, University of Arizona, Tucson, AZ  
Stephen Gray, U.S. Geological Survey, Tucson, AZ  
Hugo Hidalgo, Scripps Institute of Oceanography, La Jolla, CA  
Katherine Hirschboeck, University of Arizona, Tucson, AZ  
Katherine Jacobs, University of Arizona, Tucson, AZ  
Douglas Kenney, University of Colorado, Boulder, CO  
Jeffrey Lukas, University of Colorado, Boulder, CO  
Glen MacDonald, University of California, Los Angeles, CA  
Ramzi Touchan, University of Arizona, Tucson, AZ  
Bradley Udall, University of Colorado, Boulder, CO  
Robert S. Webb, NOAA/OAR Climate Diagnostics Center, Boulder, CO  
Connie Woodhouse, NOAA/NESDIS National Climatic Data Center, Boulder, CO

**Duren, Sabre**

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**From:** Lynn Hamilton [GCRG@infomagic.net]  
**Sent:** Friday, August 26, 2005 3:10 PM  
**To:** strategies@lc.usbr.gov  
**Cc:** GCRG-BOARD@LIST.GCRG.ORG  
**Subject:** Grand Canyon River Guides' comments on low reservoir conditions  
**Attachments:** BuRec comments on low reservoir conditions 05, Final.doc

As a diverse non-profit organization representing over 1,800 professional river guides, passengers, private boaters and assorted river and canyon aficionados, Grand Canyon River Guides offers the attached comments to this public process regarding the development of management strategies for low reservoir conditions in Lakes Powell and Mead.

We are concerned that the deadline for comments may preclude effective river guide participation since it falls at the height of the river season. Many river guides are on the water, away from home, phone and email. They will not be aware of this public process nor have the ability to offer comments, effectively disenfranchising this primary user group. Accordingly, please consider extending your deadline in order to maximize public participation.

Thank you for your consideration. We appreciate the ability to be involved in this public process and look forward to a successful resolution!

Sincerely,

Lynn Hamilton  
Executive Director  
Grand Canyon River Guides, Inc.  
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August 26, 2005

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attn: BCOO – 1000  
PO Box 61470  
Boulder, City, NV 89006-1470

To Whom It May Concern,

Grand Canyon River Guides, Inc. would like to offer our views on the development of management strategies for Lakes Powell and Mead under low reservoir (drought) conditions. Climatic studies of the Colorado Plateau suggest that the drought may continue, on and off, over the next decade. What separates this drought from earlier ones is drastically increased water demand stemming from the huge population influx into the region. We applaud the Bureau of Reclamation for developing shortage guidelines before emergencies occur. Even should precipitation levels return to average amounts, it could take more than a decade of “average” years to refill both reservoirs.

Our diverse organization of over 1,800 individuals is dedicated to protecting the Grand Canyon, setting the highest standards for the river profession, celebrating the unique spirit of the river community, and providing the best possible river experience. Our role as the recreational stakeholder for the Adaptive Management Program, and our sharp focus on the immediate environmental issues of the Colorado River within Grand Canyon National Park and the recreational concerns therein, lead GCRG to submit the following recommendations:

- 1) Regardless of the management strategies adopted by the Bureau of Reclamation pending completion of this public comment process, navigability and boating safety of the Colorado River through Grand Canyon must be ensured. Based on our extensive knowledge of the requisite conditions for safe and successful river trips, GCRG recommends that flow levels not fall below 5,000 cfs at night and 10,000 cfs during the day, while averaging no less than 8,000 cfs.

- 2) South Cove in Lake Mead now serves as the take-out point for many river trips. River guides have experienced difficulties created by river incision and shifting channels in Lake Mead due to low reservoir conditions. Furthermore, extremely low water levels could render the South Cove ramp unusable. Under these circumstances, river trips would be forced to travel significantly farther to Temple Bar, or congestion at Diamond Creek would be drastically increased, resulting in negative impacts to the Hualapai river running enterprise. Stabilizing Lake Mead water levels may lead to a reasonably constant and safer configuration that also benefits the businesses dependent upon this disembarkation point. 2
- 3) Low reservoir conditions should not impinge upon nor supersede event-driven sediment experiments from Glen Canyon Dam within the parameters approved by the Adaptive Management Program. Sediment is crucial for protecting and preserving: a) endangered species dependent upon near shore habitat, b) irreplaceable archaeological resources along the river corridor, c) camping beaches necessary for continued viability of the Grand Canyon river recreation industry, and d) the natural geomorphic features of Grand Canyon as guaranteed by the National Park Service Organic Act of 1916. 3
- 4) River restoration and endangered species are key components of the demands placed upon these reservoir systems. This focus must not be lost in the ensuing struggle between Upper and Lower Basin States. The primary mandate of the Grand Canyon Protection Act of 1992 (section 1804) pledges that: *"The Secretary shall operate Glen Canyon Dam...to protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established, including, but not limited to natural and cultural resources and visitor use"*. 4
- 5) Water allotments for all seven basin states should be reduced by the same percentage based on the projected water deficit for each year of drought. Simplicity and equitability can minimize stakeholder conflict. 5
- 6) Consider options that maximize efficiency of water storage including alternatives that reduce overall evaporative loss to the system. Also, consider ways to maximize power generation and water retention while reducing the need for daily fluctuations. 6  
7
- 7) Given the realities of continuing drought conditions exacerbated by ever increasing water demands, mandatory water conservation measures are an absolute necessity. Any basin state that successfully implements such measures should receive a pre-determined "water rebate" as an incentive. 8
- 8) Similarly, any basin state that successfully reduces its peak power demand by distribution to low peak periods or by institution of conservation and alternative energy methods should receive a "water rebate." This would lessen reliance on environmentally harmful high daily fluctuations and reduce dependence on hydro peaking power during a period of diminishing reservoir levels. 9

Grand Canyon environmental and recreational issues are widely considered a model for changing demographic challenges to the river system. As our organization's strength, Grand Canyon River Guides' principle focus will remain on the operations of Glen Canyon Dam and its downstream impacts, yet we recognize this is but one critical segment of a much larger river system. Accordingly, GCRG advocates a basin-wide approach in the following majority opinion statement of our membership: 10

*"The U.S. government should conduct all appropriate and necessary research to compile a full-scale Environmental Impact Statement delineating the impacts of Glen Canyon Dam and its power plant operations on the Colorado River's upstream and downstream resources, including national parks, monuments and recreational areas in its watershed."* 11

Initial water allotments set in the 1920s were based on data from what we now recognize as a wet cycle. Nor could policymakers envision the population explosion and societal changes experienced by the American West. The primary concern of our constituency is that the Colorado River through Grand Canyon will be "bled dry" by competing interests. We believe the American public places high value on in-stream flows, whether for recreational, environmental, hydropower, or intrinsic reasons; and additional water should not be taken from the basin to satisfy unsustainable growth of outlying metropolitan areas. 12

The Colorado River is a system of extremes, yet we stress that *a river without water is not a river*. Grand Canyon River Guides presents our recommendations to this public process in light of this overriding concern. Although the Colorado River Storage Project will continue to endure, all strategies must be examined equally and thoroughly in order to develop a creative and workable solution to the inherent challenges posed by ever-increasing demands on this river system.

Sincerely,

The Officers and Board of Directors  
Grand Canyon River Guides, Inc.



**Duren, Sabre**

**From:** greg hunt [greghunt@waterkeepers.org.au]  
**Sent:** Sunday, August 28, 2005 10:51 PM  
**To:** strategies@lc.usbr.gov; strategies@uc.usbr.gov  
**Subject:** Attention: BCOO-1000 and UC-402

Dear Regional Directors  
 Upper and Lower Colorado Regions  
 Bureau of Reclamation

Waterkeepers Australia understands that you are accepting public comment on the re-operation of the two largest reservoirs in the US, Lake Powell and Lake Mead. Communities affected by your proposals must be involved in your decision-making processes to ensure that the range of views is contributed to maximise the possibility of sound decisions. You must examine the viability of permanently ceasing operations at Lake Powell and employing just one reservoir to capture and manage the bulk of Colorado River flows. Our colleagues at Living Rivers have given you reasons for this course of action as follows:

Please know that:

1. No longer a need for a single-use dam at Glen Canyon

1

It was not until the fall of 2004, more than 40 years after Glen Canyon Dam began impounding Lake Powell that Lake Powell water storage actually augmented water storage downstream. But with climate change already causing long-term flow reductions, and water consumption levels near the river's historic average flow and rising, it's unlikely that Lake Powell will fill again. The surplus water that filled it during 17 years the first time is no longer there to build a storage cushion. Even should surplus water accumulate, Lake Mead on its own could accommodate it.

2. It's time for more efficient storage

2

With Lake Powell and Lake Mead losing to evaporation upwards of 17 percent of the water that flows into them, it's time that more efficient means be explored for storing this precious water. Vacant space in underground aquifers on, or accessible to, existing Colorado River infrastructure could accommodate more water than these two reservoirs combined—and with far greater efficiency. Upwards of 810,000 acre-feet of water annually—enough water for 1.6 million households of four people each—could be saved by eliminating Lake Powell and operating Lake Mead principally for distribution to groundwater recharge facilities.

3. Revive Grand Canyon

3

Between Lake Powell and Lake Mead lies one of the world's most famous and geologically and ecologically unique river canyons, Grand Canyon National Park. The operation of both these reservoirs has impacted the Canyon, but Glen Canyon Dam has been far more devastating. Since its completion four of eight native fish have gone extinct and the dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization of archaeological sites.

4. Manage the sediment

4

Sediment is a major unresolved problem threatening the long-term operations of Lake Powell and Lake Mead. Ultimately, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative. While original estimates projected that sediment would not effect the safe operations of Glen Canyon Dam for another 60 years, scientists now warn that major problems could occur sooner.

5. Revise the Colorado River Compact

5

The Colorado River Compact of 1922, which largely governs the discharge of flows from Lake Powell to Lake Mead, cannot meet its intended purpose of sharing Colorado River water equitably between the Upper and Lower Basin states.



The Compact allocated 11 percent more water than the river has to give, and affords the Lower Basin 20 percent more water than the upper basin. With river flows expected to decline 18 percent by 2040, this inequity will worsen as the Upper Basin is required to deliver to the Lower Basin its full share regardless of declines in river flow.

A comprehensive assessment addressing the issues above is fully warranted and should be done through an Environmental Impact Statement. These issues have effects far beyond national borders, and need for the involvement of communities in environmental management is universal. Your Bureau would do well to incorporate this thinking.

Yours sincerely

Greg Hunt  
National Manager  
Waterkeepers Australia

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No virus found in this outgoing message.

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Version: 7.0.344 / Virus Database: 267.10.16/83 - Release Date: 26/08/2005

**Duren, Sabre**

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**From:** Lynn Hamilton [GCRG@infomagic.net]  
**Sent:** Monday, August 29, 2005 2:59 PM  
**To:** strategies@lc.usbr.gov  
**Subject:** Grand Canyon River Guides' comments - received?

This is same Commenter as  
G.010, No additional comments  
provided in this letter

On Friday the 26th, we emailed Grand Canyon River Guides' comments on the development of management strategies for low reservoir conditions in Lakes Powell and Mead. Can you please confirm your receipt of these comments? Thank you very much.

Lynn Hamilton  
Executive Director  
Grand Canyon River Guides  
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Flagstaff, AZ 86002  
(928) 773-1075 Phone  
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G.012

9/4/2005

## Duren, Sabre

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**From:** John Weisheit [john@livingrivers.org]  
**Sent:** Monday, August 29, 2005 2:20 PM  
**To:** strategies@lc.usbr.gov; strategies@uc.usbr.gov  
**Cc:** john@livingrivers.org  
**Subject:** Living Rivers supplemental letter

Note: This is same Commenter and comments as G.001, no additional or new comments provided in this letter

**Attachments:** LivingRivers02.pdf



LivingRivers02.pdf  
(121 KB)

To: The Regional Directors of the Upper and Lower Colorado, Bureau of Reclamation  
From: Living Rivers/Colorado Riverkeeper  
Date: August 29, 2005

A file called LivingRivers02.pdf is attached. The letter submitted includes a coalition of groups that support "The One-Dam Solution," previously submitted by Living Rivers staff to the Bureau of Reclamation at the scoping meetings of July 26 and 28, 2005 at Henderson, Nevada and Salt Lake City, Utah, respectively.

Please let me know if there are problems concerning this pdf file. I will deliver a copy by hand to Bureau of Reclamation staff at tomorrow's AMWG meeting in Phoenix.

Thank you  
John Weisheit  
Conservation Director  
Living Rivers and Colorado Riverkeeper

G.013

# LIVING RIVERS

COLORADO RIVERKEEPER<sup>®</sup>

August 30, 2005

Mr. Bob Johnson  
Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, NV 89006-1470

Mr. Rick Gold  
Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attention: UC-402  
125 South State Street  
Salt Lake City, Utah 84318-1147

Dear Mr. Johnson & Mr. Gold,

Living Rivers, Colorado Riverkeeper, and the undersigned organizations submit the following report, *The One-Dam Solution*, as scoping comments for the development of management strategies for operations at Lake Powell and Lake Mead, on the Colorado River, under low reservoir conditions.

With current demand for Colorado River water nearly at the river's historical annual flow of 13.5 million-acre feet (MAF) and rising, and government-sponsored scientists anticipating average annual flows to decline 18 percent by 2040, the prospect of ongoing low water conditions for Colorado River reservoirs is a near certainty. The average flow of 60 percent into the system for the past six years is firm evidence of this.

For more than 25-years, government scientists and administrators have warned that shortages would be occurring now. This action is the first to reexamine the flawed operational strategies that have been in place as far back as 1922 when the Colorado River Compact allocated 11 percent more water than the Colorado River has to give.

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Reexamining these two reservoirs is critical, as they constitute more than two-thirds of the system's storage capacity, which with declining inflows and increased demand are proving excessive.

Meanwhile, these two reservoirs can cause the loss of upwards of ten percent of the river's average annual flow due to evaporation—valuable water for critical habitats and water users downstream.

Furthermore, the challenges facing the future operations of these reservoirs go beyond water allocation and storage inefficiencies. Sediment entering Lake Powell will eventually compromise Glen Canyon Dam's safety. Despite recent warnings that this could happen sooner than the 40-year-old estimate of 2060, there has been no comprehensive monitoring or analysis conducted to address this inevitable problem.

Lastly, despite more than \$200 million already spent, no gains have been made to restore the critical habitat for endangered species in Grand Canyon National Park impacted by Glen Canyon Dam's operations. The mandates of the Grand Canyon Protection Act and the Endangered Species Act in particular are being ignored to maintain Lake Powell even though it is proving to be both wasteful and unnecessary for water storage.

It is therefore critical that the Bureau of Reclamation broadly reexamine the operations of these facilities in accordance with preparing an Environmental Impact Statement to address the following:

- 1) Pursue transfers of Lake Powell and Lake Mead storage to groundwater aquifers.
- 2) Develop a sustainable sediment management program for Lake Powell and Lake Mead.
- 3) Determine the costs and benefits of decommissioning Glen Canyon Dam to restore natural flows through Glen and Grand Canyons.
- 4) Identify new water allocation guidelines to reflect the amount of water the Colorado River actually provides, how it should be distributed and what amounts are needed to protect critical habitats in Grand Canyon and elsewhere.

A water management crisis is looming on the Colorado River. The federal government, as Water Master, has the responsibility to help avert this. Most of the issues addressed in the attached report are not new, but continuing to ignore them will only worsen the impacts once the crisis arrives.

Page three  
Regional Directors Johnson and Gold

Thank you for the opportunity to submit these comments. As this process continues in the months ahead, we will be expanding the alliance of groups concerned about the protection of the water resources from the Colorado River.

Sincerely yours,

Original signed

John Weisheit  
Conservation Director, Living Rivers  
Colorado Riverkeeper

Attachment: *The One-Dam Solution*

On behalf of the following groups:

Alabama Environmental Council  
American Wildlands  
Audubon Society of Greater Denver  
Black Warrior Riverkeeper  
Blackwater/Nottoway Riverkeeper  
Bluewater Network  
Boulder Regional Group  
Buckeye Forest Council  
California Save Our Streams Council  
Center for Biological Diversity  
Choqueyapu Riverkeeper  
Cold Mountain, Cold Rivers  
Colorado Plateau River Guides  
Colorado White Water Association  
Coosa River Basin Initiative  
Dogwood Alliance  
Electors Concerned about Animas Water  
Endangered Habitats League  
Erie Canalkeeper  
Forest Guardians  
Forest Watch  
Forests Forever  
Four Corners School of Outdoor Education  
Free the Planet  
Friends of Living Oregon Waters

Page four  
Regional Directors Johnson and Gold

Friends of the Animas River  
Friends of the Earth  
Friends of the Eel River  
Friends of the Milwaukee River  
Glen Canyon Institute  
Goods From The Woods  
Grand Riverkeeper  
Great Egg Harbor Watershed Association  
Great Old Broads for Wilderness  
Green Party of Utah  
Hells Canyon Preservation Council  
Inland Empire Waterkeeper  
International Society for Preservations of the Tropical Rainforest  
Jumping Frog Research Institute  
Kettle Range Conservation Group  
Land Institute  
London Canalkeeper  
Lone Tree Council  
Lower Neuse Riverkeeper  
Maricopa Audubon  
Milwaukee Riverkeeper  
Morava Riverkeeper  
New Riverkeeper  
New River Foundation  
Northwest Rafters Association  
Northwoods Wilderness Recovery  
Neuse River Foundation  
Orange County Coastkeeper  
Oregon Natural Desert Association  
Outdoor Adventure River Specialists  
Patapsco Riverkeeper  
Red Rock Forests  
Restore: The North Woods  
Ridgeline & Open Space Coalition  
River Runners for Wilderness  
Riverhawks  
Rocky Mountain Peace and Justice Center  
Russian Riverkeeper  
Sacramento River Preservation Trust  
Salt Creek Watershed Network  
San Diego Coastkeeper  
San Luis Obispo Coastkeeper  
Satilla Riverkeeper



Page five  
Regional Directors Johnson and Gold

Southern Utah Wilderness Alliance  
Taxpayers for the Animas River  
The Clinch Coalition  
The River Project  
Upper Coosa Riverkeeper  
Ventura Coastkeeper  
Virginia Forest Watch  
West/Rhode Riverkeeper  
Western Watersheds Project  
Wild Wilderness  
Wilderness Watch  
Wildlaw

**DEFENDERS OF WILDLIFE □ ENVIRONMENTAL DEFENSE □  
NATIONAL WILDLIFE FEDERATION □ THE NATURE CONSERVANCY IN ARIZONA □  
PACIFIC INSTITUTE □ SIERRA CLUB □  
SONORAN INSTITUTE**

August 31, 2005

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attn: BCOO-1000  
P.O. Box 61470  
Boulder City, NV 89006-1470

Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attn: UC-402  
125 South State Street  
Salt Lake City, UT 84318-1147

*Via Facsimile (702-293-8156 & 801-524-3858) and Mail*

Re: Colorado River Reservoir Operations: Development of Management Strategies  
for Lake Powell and Lake Mead Under Low Reservoir Conditions

Dear Sirs:

These comments regarding Lake Powell and Lake Mead management strategies, including Lower Basin shortage guidelines, are submitted on behalf of Defenders of Wildlife, Environmental Defense, National Wildlife Federation, the Nature Conservancy in Arizona, Pacific Institute, Sierra Club, and the Sonoran Institute. At its public meetings in June, the Bureau of Reclamation (Reclamation) sought answers to specific questions about the process the agency should use. These included the form the strategies should take, whether they should be interim or permanent, and the appropriate level of National Environmental Policy Act (NEPA) analysis.

We urge Reclamation to prepare an Environmental Impact Statement (EIS) on management strategies (including shortage guidelines) pursuant to NEPA. Reclamation appropriately prepared an EIS for the Interim Surplus Guidelines; like the Interim Surplus Guidelines, new management strategies for the Colorado River system would represent a "major federal action significantly affecting the environment" and would likewise merit full analysis and disclosure. As such, Reclamation should, of course, examine alternative strategies which may be interim or permanent, and may be implemented through the Annual Operating Plan (AOP), Long Range Operating Criteria (LROC), formal rule-making or guidelines.



Several of the groups on this letter have already submitted a proposal, entitled "Conservation Before Shortage," as to the substance of a management strategy during shortage and The Nature Conservancy in Arizona is now adding its support to that proposal by joining this letter. The intent of the Conservation Before Shortage proposal is to suggest a method by which increased flexibility can be introduced into the management of river resources in order to increase the reliability and predictability of water deliveries under low reservoir conditions. Providing for increased levels of flexibility in river management will be critical to meeting the demands of both human and environmental water users in the future, particularly as Upper Basin use and the impacts of climate change decrease overall water availability in the Colorado River system. However, the mechanisms proposed in the Conservation Before Shortage proposal are clearly not the only means by which such flexibility could be achieved. For example, recent discussions between the Basin States have highlighted options such as conjunctive management of system reservoirs, banking of water in Lake Mead, providing credits for the temporary or permanent retirement of pre-1928 tributary water, and other mechanisms. We urge Reclamation to consider a broad range of alternatives for introducing increased flexibility into river management, including the mechanisms described in the Conservation Before Shortage proposal.

With regard to the form of a preferred strategy, the preferred alternative should take the form of guidelines, like the Interim Surplus Guidelines (which were also the subject of an EIS). Formal rulemaking is not appropriate in this situation, nor is ad hoc implementation through the AOP. Guidelines will fulfill the need of water users who rely on the Colorado River to plan for the occurrence and amount of shortage and the impact on water deliveries. These guidelines, like the Interim Surplus Guidelines (ISG), would be applied each year as part of the AOP process and be subject to review every five years, concurrent with LROC reviews. Guidelines that are the subject of an EIS will also have the benefit of a Record of Decision that clearly spells out any final decision.

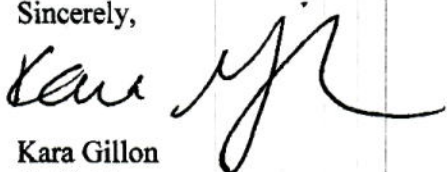
Lastly, we urge Reclamation to issue permanent guidelines. Unlike the Interim Surplus Guidelines, which were developed to meet a specific purpose – to give California a "soft landing" while reducing its water use to 4.4 million acre-feet over a fifteen-year period – shortage guidelines will be designed to meet a broader purpose – management during low reservoir conditions. Shortage guidelines should be designed to guide water management and use now and in the future, as the drought conditions that have prevailed in the Colorado River Basin for the past six years may well continue past 2016 and in any event are certain to return in the future. Mechanisms to increase flexibility in the river system and allocate potential shortfalls will thus need to be applicable for the long-term, particularly as the Upper Basin continues to develop its water supply and as water availability in the entire Basin is impacted by extended drought events or by climate change. Furthermore, alternatives that would be in effect concurrently with the ISG (and thus only in effect for determinations made through calendar year 2016) do not make sense as they would be in effect for only eight years assuming that Reclamation completes this process by December 2007; short-term guidelines could thus put Basin water users back in a similar or worse position than they are today in less than a decade. While changes to shortage management strategies may well be necessary in the future to respond to changing demands associated with human and environmental needs in the Lower Basin, Upper Basin, and Mexico, it is critical that Reclamation establish a lasting framework within which long-term water planning can be conducted.

G.014



Thank you for this opportunity to comment. Please place us on your mailing list and send further documentation as it becomes available.

Sincerely,



Kara Gillon  
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# LIVING RIVERS

## COLORADO RIVERKEEPER®

August 30, 2005

Mr. Bob Johnson  
Regional Director  
Bureau of Reclamation, Lower Colorado Region  
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Boulder City, NV 89006-1470

Mr. Rick Gold  
Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attention: UC-402  
125 South State Street  
Salt Lake City, Utah 84318-1147

Dear Mr. Johnson & Mr. Gold,

Living Rivers, Colorado Riverkeeper, and the undersigned organizations submit the following report, *The One-Dam Solution*, as scoping comments for the development of management strategies for operations at Lake Powell and Lake Mead, on the Colorado River, under low reservoir conditions.

With current demand for Colorado River water nearly at the river's historical annual flow of 13.5 million-acre feet (MAF) and rising, and government-sponsored scientists anticipating average annual flows to decline 18 percent by 2040, the prospect of ongoing low water conditions for Colorado River reservoirs is a near certainty. The average flow of 60 percent into the system for the past six years is firm evidence of this.

For more than 25-years, government scientists and administrators have warned that shortages would be occurring now. This action is the first to reexamine the flawed operational strategies that have been in place as far back as 1922 when the Colorado River Compact allocated 11 percent more water than the Colorado River has to give.

Reexamining these two reservoirs is critical, as they constitute more than two-thirds of the system's storage capacity, which with declining inflows and increased demand are proving excessive.

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Note: This is same Commenter and comments as G.001, no additional or new comments provided in this letter

G.015

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Meanwhile, these two reservoirs can cause the loss of upwards of ten percent of the river's average annual flow due to evaporation—valuable water for critical habitats and water users downstream.

Furthermore, the challenges facing the future operations of these reservoirs go beyond water allocation and storage inefficiencies. Sediment entering Lake Powell will eventually compromise Glen Canyon Dam's safety. Despite recent warnings that this could happen sooner than the 40-year-old estimate of 2060, there has been no comprehensive monitoring or analysis conducted to address this inevitable problem.

Lastly, despite more than \$200 million already spent, no gains have been made to restore the critical habitat for endangered species in Grand Canyon National Park impacted by Glen Canyon Dam's operations. The mandates of the Grand Canyon Protection Act and the Endangered Species Act in particular are being ignored to maintain Lake Powell even though it is proving to be both wasteful and unnecessary for water storage.

It is therefore critical that the Bureau of Reclamation broadly reexamine the operations of these facilities in accordance with preparing an Environmental Impact Statement to address the following:

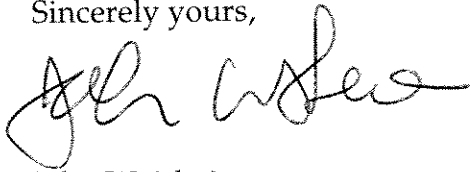
- 1) Pursue transfers of Lake Powell and Lake Mead storage to groundwater aquifers.
- 2) Develop a sustainable sediment management program for Lake Powell and Lake Mead.
- 3) Determine the costs and benefits of decommissioning Glen Canyon Dam to restore natural flows through Glen and Grand Canyons.
- 4) Identify new water allocation guidelines to reflect the amount of water the Colorado River actually provides, how it should be distributed and what amounts are needed to protect critical habitats in Grand Canyon and elsewhere.

A water management crisis is looming on the Colorado River. The federal government, as Water Master, has the responsibility to help avert this. Most of the issues addressed in the attached report are not new, but continuing to ignore them will only worsen the impacts once the crisis arrives.

Thank you for the opportunity to submit these comments. As this process continues in the months ahead, we will be expanding the alliance of groups concerned about the protection of the water resources from the Colorado River.

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Sincerely yours,

A handwritten signature in black ink, appearing to read 'John Weisheit', written in a cursive style.

John Weisheit  
Conservation Director, Living Rivers  
Colorado Riverkeeper

On behalf of the following groups:

Alabama Environmental Council  
American Wildlands  
Audubon Society of Greater Denver  
Black Warrior Riverkeeper  
Blackwater/Nottoway Riverkeeper  
Bluewater Network  
Boulder Regional Group  
Buckeye Forest Council  
California Save Our Streams Council  
Center for Biological Diversity  
Choqueyapu Riverkeeper  
Cold Mountain, Cold Rivers  
Colorado Plateau River Guides  
Colorado White Water Association  
Coosa River Basin Initiative  
Dogwood Alliance  
Electors Concerned about Animas Water  
Endangered Habitats League  
Erie Canalkeeper  
Forest Guardians  
Forest Watch  
Forests Forever  
Four Corners School of Outdoor Education  
Free the Planet  
Friends of Living Oregon Waters  
Friends of the Animas River  
Friends of the Earth  
Friends of the Eel River  
Friends of the Milwaukee River  
Glen Canyon Institute  
Goods From The Woods  
Grand Riverkeeper



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Great Egg Harbor Watershed Association  
Great Old Broads for Wilderness  
Green Party of Utah  
Hells Canyon Preservation Council  
Inland Empire Waterkeeper  
International Society for Preservations of the Tropical Rainforest  
Jumping Frog Research Institute  
Kettle Range Conservation Group  
Land Institute  
London Canalkeeper  
Lone Tree Council  
Lower Neuse Riverkeeper  
Maricopa Audubon  
Milwaukee Riverkeeper  
Morava Riverkeeper  
New Riverkeeper  
New River Foundation  
Northwest Rafters Association  
Northwoods Wilderness Recovery  
Neuse River Foundation  
Orange County Coastkeeper  
Oregon Natural Desert Association  
Outdoor Adventure River Specialists  
Patapsco Riverkeeper  
Red Rock Forests  
Restore: The North Woods  
Ridgeline & Open Space Coalition  
River Runners for Wilderness  
Riverhawks  
Rocky Mountain Peace and Justice Center  
Russian Riverkeeper  
Sacramento River Preservation Trust  
Salt Creek Watershed Network  
San Luis Obispo Coastkeeper  
Satilla Riverkeeper  
Southern Utah Wilderness Alliance  
Taxpayers for the Animas River  
The Clinch Coalition  
The River Project  
Upper Coosa Riverkeeper  
Ventura Coastkeeper  
Virginia Forest Watch  
West/Rhode Riverkeeper

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Western Watersheds Project  
Wild Wilderness  
Wilderness Watch  
Wildlaw

PLEASE ADD

SAN DIEGO COASTKEEPER  
CASCO BAYKEEPER  
UPPER NEUSE RIVERKEEPER  
MONTANA RIVER ACTION



# WYOMING FARM BUREAU FEDERATION

P.O. Box 1348

Laramie, Wyoming 82073 • (307) 745-4835

August 31, 2005

Regional Director, Bureau of Reclamation  
Lower Colorado Region  
Attn: BCOO-1000  
P.O. Box 61470  
Boulder City, NV 89006-1470

To Whom It May Concern:

The Wyoming Farm Bureau Federation would like to provide the following comments to the Bureau of Reclamation with respect to the Development of Management Strategies for Lake Powell and Lake Mead under low reservoir conditions. The Wyoming Farm Bureau Federation represents agricultural producers throughout the state of Wyoming. As an upper basin state under the Colorado River Compact, Wyoming and its agricultural producers have a great deal of interest in any actions taken within the basins of the Colorado River Compact.


- 1) **Revise reservoir operating rules to store water in headwater reservoirs as long as possible.** The evaporation that takes place during the summer months at Lake Mead and Lake Powell is significant. Lake Powell can lose between 430,000 and 600,000 acre-feet of water through evaporation, enough to supply Los Angeles with water for an entire year and more than twice what Las Vegas needs. Lake Mead, with its lower elevation and higher temperatures loses even more; around 700,000 acre-feet per year. As a comparison, the entire Green River Basin in Wyoming, which includes Flaming Gorge Reservoir, loses approximately 26,000 acre-feet to evaporation annually. By storing more water in the headwater reservoirs, including Flaming Gorge, the impacts of a prolonged drought could potentially be mitigated. 1
- 2) **Maintain current apportionment.** Wyoming has never used its full apportionment of water under the compact. However, when the compact became effective in 1922, the state was given an apportionment in perpetuity. It is important that Wyoming continues to hold entitlement to its full apportionment under the compact for future development projects and needs. 2
- 3) **Consider proportional sharing of short-term (drought) shortages, much like the current upper basin compact.** Presently, the Upper Basin states shoulder the whole burden in drought years and stand to be the ones to lose if there is a prolonged drought. In the formulation of the Lake Powell and Mead drought 3

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management plan there should be some mention of a proportional sharing of short-term shortages among the lower basin states. Some states could be dramatically affected by long-term drought. Both Colorado and Arizona would stand to lose a great deal of the municipal supply of Phoenix and Denver during a prolonged drought under the current arrangement. Some type of proportional sharing could prevent such a crippling event from taking place.

Thank you for the opportunity to comment on the development of management strategies for Lake Powell and Lake Mead under low reservoir conditions.

Respectfully,



David Willms  
Director of Government and Legal Affairs

Cc: NER Committee  
Board  
Governor's Office  
Wyoming Congressional Delegation